



# State of Utah

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October 7, 1998

TO: Minerals File

FROM: D. Wayne Hedberg, Permit Supervisor *DWH*

RE: Joint Agency Meeting, Closure Plan Discussions, USMX of Utah Inc./Dakota Mining Corp. (USMX), Goldstrike Mine, M/053/005, Washington County, Utah

Date of Meeting: October 6, 1998  
Time of Meeting: 10:15 AM - 12:15 PM  
Location: DOGM Office  
Participants: Larry Gore, BLM (via teleconference call); Larry Mize & Lyle Stott, DWQ; Doug Jensen, USMX of Utah, Inc.; Wayne Hedberg, Randy Harden, Tom Munson, DOGM

Purpose of Meeting: To discuss operator's latest response to our previous joint agency review comments on USMX's initial draft Closure Plan for the Goldstrike Mine. To develop an acceptable final long term solution to dispose of and/or treat the residual effluent draining from the heap leach pads (some constituents do not presently meet drinking water standards for receiving waters).

Division personnel opened the meeting with a general outline/discussion of the remaining technical issues still of concern to the regulatory agencies following the review of USMX's latest revised Closure Plan. The principal areas of concern included the following:

- Proposed BLM "Right-of-Way" requirement for remaining federal lands affected by the remaining effluent collection and treatment system.
- DWQ's position that latest JBR Consultant's response failed to demonstrate a "diminimus" impact to receiving ground water system (with planned leach field subsurface treatment proposal).
- What type of effluent treatment methodology will be acceptable to the regulatory agencies?
- What type of post-closure monitoring requirements would be required by the regulatory agencies and for what duration?



Mr. Gore presented his preliminary calculations of what the Right-of-Way costs would likely be for the federal lands affected over an initial 10-yr. period. The present maps in the Closure Plan indicated that @1/10 of an acre of federal land would be affected. A rental fee of \$12.22/acre is normally assessed which would yield a \$12.22 fee for a 10-yr. time frame. A \$125 application fee and a \$50 monitoring fee would bring the total to \$187.22. Mr. Gore stated there would be no bonding provision associated with this Right-of-Way agreement. It was proposed that the agreement be placed in USMX's name rather than either of the state agencies. Mr. Jensen believed this provision and the rental fee could be covered by USMX if required.

Larry Mize explained that DWQ's assessment of the latest Closure Plan failed to adequately demonstrate that the proposed subsurface leach field treatment methodology would be sufficient to attenuate the elevated nitrate effluent concentrations down to drinking water standards. Nor did the proposal accurately predict when and to what level the effluent discharge rate would eventually drop off to. An accurate projection on what the nitrate levels would finally drop to and how long this would take were also unknowns. DWQ proposed that the operator look at implementing a surface land application proposal instead of a subsurface application in order to increase the likelihood of a natural reduction of nitrates through volatilization and plant/vegetation uptake.

Several different ideas and alternatives were discussed and most dismissed by the group due to unacceptable permitting consequences or other complications. The group finally agreed that a final "fail-safe" solution for the long term was not resolvable at the present time, given the previously mentioned unknowns. For the short-term (next 5 years or so) USMX agreed to continue to use a direct land application proposal that would probably involve the use of a series of "mistlers" connected to the main distribution system. Gravity pressure would drive the system and backup/default lines would be designed into the plan in the event of a problem with the main application line. Mr. Jensen estimated that approximately 2 acres of land area would be "irrigated" in this manner. The area would probably need to be fenced to keep cattle from entering the area and damaging the distribution system.

Obviously the system will need to be monitored and maintained during the interim period. Forfeited bond monies will be utilized for construction of the system and for continued monitoring and maintenance. A portion of the bond will also be retained for possible future construction of a more permanent effluent disposal system. Mr. Jensen believed that their current ground water permit from DWQ would require monthly monitoring for at least the first year. The specifics of the monitoring will be negotiated between the respective parties as the interim plan is drafted and finalized. Mr. Mize stated that DWQ anticipated at least two monitoring events "per year" at some selected wells and "at the distribution sump to the irrigation site." The list of parameters which are presently monitored for could be evaluated and possibly reduced to a core set. Both the number of samples and parameters could be reduced which would lower the amount of bond necessary for monitoring. These changes would need to be reflected in a modified ground water discharge permit to reflect how the site is managed under the closure plan scenario. A reduction in the number of parameters monitored could reduce analytical costs to approximately \$150-200 per sample. Additional costs for sample collection (supplies/equipment), periodic distribution system maintenance/repair, sampling personnel wages, travel



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expenses, etc., would need to be factored in as well. Randy Harden suggested a conservative estimate of \$500/sample be set aside for continued monitoring following completion of the reclamation activities.

Mr. Jensen believed it would take him about 3 weeks to prepare a draft "generic" plan for our joint review. Specific "as-built" design drawings would follow the actual construction and implementation of the facility due to the present time constraints. All parties agreed that this scenario would be acceptable. Mr. Jensen anticipated that approximately 99% of the final reclamation and seeding work would be completed within the next 2-3 weeks.

It was the groups consensus that sufficient monitoring information would hopefully be obtained over the initial 5 year monitoring period to help quantify and project what will happen to the flow and quality of the heap effluent over the long term. This information will be used to finalize the ultimate closure plan for the residual effluent coming from the heaps. It is also possible that future technological advances may also bring about other sound and cost effective treatment methodologies as more cyanide heap leach facilities are reclaimed and closed across the country.

Under this interim treatment scenario, the BLM indicated that a "Right-of-Way" would not be necessary. The current (albeit slightly modified) direct land application activities would continue under the existing mining and reclamation plan until the final closure plan is approved and implemented at a future date.

It was also agreed that we may need to seek acceptance/concurrence from the private land owner (Bull Valley LLC) to allow for the continued use of their patented property for the direct land application treatment of the heap effluent during the post-mining monitoring period.

jb  
cc: Doug Jensen, USMX  
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Larry Mize, DWQ  
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